Project #J183

SUBSTUDY 1 - 7 & Jo - 69

ILLICIT DRUG USERS: THEIR SOCIAL BACKGROUNDS, AND DRUG USE

Addiction Research Foundation

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AND DRUG USE

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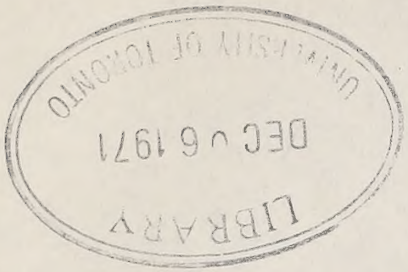

ILLICIT LSD USERS: THEIR SOCIAL BACKGROUNDS, AND DRUG USE

Reginald G. Smart and Dianne Jones

Prior to 1960 there were almost no reports of illicit LSD use, (Smart and Bateman, 1967), but since 1965 numerous reports of usage have appeared. Studies have been made of the extent of usage in various college populations. For example, Pearlman (1968) found that only 2 out of 1,245 students at Brooklyn College had used LSD, but Imperi, Kleber and Davie (1968) found that 7 per cent of students at Wesleyan University and 2 per cent at Yale had used LSD. However, these studies contain little information about the social backgrounds of LSD users, their personality characteristics, their motivations for LSD use, and their use of other types of drugs. This paper reports a study of these variables in illicit LSD users and presents comparisons with a sample of non-users of the same age, sex, and social class background.

Most of the available information about LSD users has been drawn from studies of persons with adverse reactions, or from small, biased samples of users. A recent review by Smart and Bateman (1967) of reported unfavorable reactions found that these reactions occurred mainly in males under 25, many of whom were college students or former students. Unfortunately, none of the studies of adverse reactions clarified the reasons for taking LSD nor the extent of drug use in those affected. Of course, it is not known whether those with adverse reactions are representative of the total population of LSD users. It is generally assumed that LSD users are mainly middle class males who experiment with LSD for "kicks" or recreation but no adequate studies have made this clear.

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Reginald G. Smart and Dianne Jonas

Blum's study of LSD users (1965) did not depend upon persons with adverse reactions to LSD. However, it was conducted before the widespread illicit use of LSD and even before possession of LSD had become illegal. In addition, Blum's studies were made, primarily, with persons who took LSD in medically protected settings, i.e., in psychotherapy or in research projects. Only 12 persons were studied who obtained LSD on the black market. Blum found that this "informal black-market sample" constituted a single social group whose members often took LSD together in a "party" setting. Their LSD use was "infrequent" and all members of the group used other drugs as well. Unfortunately, neither extensive data on the nature of drug use other than LSD nor any indications of age and social characteristics were given. Of course, this small sample may differ substantially from the present population of illicit users in general drug use and in many factors of social background as well.

A study of 21 "acidheads" (Blacker, Jones, Stone, and Pfefferbaum, 1968) at the Langley Porter Neuropsychiatric Institute found that all were from middle class backgrounds. However, this study was concerned mainly with abnormal neurological findings, chiefly from EEG recordings.

A recent study by Ungerleider, Fisher, Fuller and Caldwell (1968) compared 25 LSD users with adverse reactions with 25 users without adverse reactions. However, those without adverse effects were all members of the same club devoted to drug taking. All were former drug addicts and ex-criminals but were working at tilling the soil. It is clear then that this group of LSD users was a special select group, if only by virtue of their former drug addiction and criminality.

There were several main concerns in this study. An important aim was to determine the social and personality characteristics of the LSD users and to compare them to a a matched sample of non-LSD users. Another concern was to understand the nature and extent of their use of a variety of drugs such as alcohol, tranquillizers, barbiturates and marijuana. It is uncertain, for example, whether there are persons who use only LSD or whether they use a wide variety of psychedelic and psychoactive drugs. Because the frequency of adverse reactions to LSD is unknown, questions were asked about these reactions and about the general subjective effects of the psychedelics. An attempt was made to determine the motivations for LSD use and the manner in which usage began. More general information about intelligence, personality, and psychological disturbance was also collected.

I - METHOD

(1) Selection of the LSD Users

In all, 100 hallucinogenic drug users were selected for study. These were persons who had taken LSD bought on the illicit market; those who had taken LSD only as a part of psychiatric therapy or as a participant in drug research were excluded. Although users who had LSD only on one occasion were included, most users had taken it more often and the range was from 1 to 400 occasions. No attempts were made to select people who had tried only LSD, and the majority of users studied had sampled a variety of hallucinogens, including marijuana, STP, mescaline and many other drugs as well.

Ideally, we wished to make a random selection from the total population of LSD users. However, neither the size of the population nor any of its demographic and psychological characteristics are known, beyond the oft repeated statement that they were predominantly young and middle class. Of course, under these circumstances it was impossible to know whether an unbiased sample had been obtained. In order to partially compensate for the possible biases involved in non-random sampling we attempted to obtain as many different types of LSD users as possible. Special efforts were made to include users who were very young (under 15), very old (over 25), working full time, in university full time, or in high school full time. Some users in all of these categories were included and it is hoped that at least the whole range of users has been covered.

The LSD users were obtained by contact with informants who knew LSD users prior to the initiation of the project. A small number of trustworthy informants referred friends and associates who were known to be LSD users. These users were paid $5.00 for their participation. At the outset, the investigators were concerned about attracting curious non-users and had difficulties in contacting bona fide LSD users. However, after a few months the unofficial communications network of users brought numerous participants. They came to the ADARF Research Department for an interview and psychological tests which required about three hours to complete.[1]

(2) Non-Users

In order to provide comparative data for the drug users, 46 non-users were also studied. They were selected from high school, university, and working populations to be similar to the LSD users in age, sex, and social class. However, none of them had used LSD. Again, all were volunteers.

(3) The Structured Interview

Both groups participated in a structured interview concerned with their social and demographic characteristics and their drug use. It included questions concerning age, sex, marital characteristics, education, religion, ethnic origin, and social class. Questions were also asked about the use of a variety of drugs. These drugs included alcohol, tranquillizers, barbiturates, anti-depressants, stimulants, and the hallucinogens such as LSD and marijuana. Basically, three types

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[1] All of the interviews and psychological testing were conducted by Karen Bateman.

of information about drugs were being sought; this included information on (1) frequency of usage, (2) the source from which the drugs were obtained and (3) the perceived effects of the drug, both adverse and beneficial.[2]

The last area covered by the questionnaire concerned contacts with mental health agencies. Questions were asked about the frequency of consultations with psychiatrists, psychologists, mental health clinics and mental hospitals, and the reasons for these consultations.

The interviews were all conducted by the same person. Because of her relative youth, empathy with young people (including drug users), and certain natural habits of dress, life style and deportment, the interviewer was especially effective in gaining the co-operation of both users and non-users. It is felt that most drug users reacted with surprising candour in their interviews.

(4) Psychological Tests

Three psychological tests, Otis Quick-Scoring Mental Ability Test - Gamma Form AM, the Thematic Apperception Test, and the Minnesota Multiphasic Personality Inventory were given to all persons in both groups.

(a) Otis Quick-Scoring Mental Ability Tests

The Otis Quick-Scoring Mental Ability Test (Otis, 1937) was used as a measure of general intelligence. This test is of the paper and pencil variety with 80 questions, all of which are concerned with some

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[2] The complete questionnaire will be sent on request to the authors.

aspect of verbal or arithmetic knowledge. The raw scores can be transformed into IQ scores,and norms are available for age levels 11 to 17 and for 18 or over. In general, the Otis provides an indication of verbal intelligence, but spatial, perceptual or motor abilities are not examined. Gamma Test, Form AM, the one used in this study, was especially designed for high school and college educational levels.

(b) The Thematic Apperception Test

The Thematic Apperception Test is a projective technique which has been extensively used in the investigation of personality dynamics. The TAT requires that the person tell "dramatic" stories for each of a series of pictures. These stories are to contain a beginning and an ending and to emphasize what the people are thinking and feeling.

The TAT has been found (see Murstein, 1965, for a review) to be a valid instrument for measuring the fantasies of individuals. It has been validated against extensive studies of individuals using non-fantasy materials. Usually, the TAT is taken to reveal "some of the dominant drives, emotions, sentiments, complexes and conflicts of a personality." The rationale for this view is "the tendency of people to interpret an ambiguous human situation in conformity with past experiences and present wants." The value of TAT interpretation in eliciting information about dynamic or motivational forces depends on its value in circumventing defences and displaying associations which are often repressed. Many a person loses himself in the story-telling task so that "he forgets his sensitive self and the necessity of defending it against the probing of the examiner." (Murray, 1943).

Detailed scoring systems are typically not used for the TAT and it is used more as a method of clinical inquiry than as a test. Usually, themes in the stories are scored and special note is taken of themes which recur in several stories. As has been stated "a subject must be so preoccupied with a theme that he feels impelled to repeat frequently in response to pictures that bear no necessary relationship to it." (Pope and Scott, 1967, p. 179).

The purpose of giving the TAT in this study was to investigate some of the conflicts and personality dynamics of the LSD users, their needs, desires, and methods of coping with them.

(c) The Minnesota Multiphasic Personality Inventory

The MMPI was administered as an objective test of personality. It is characteristically used as a diagnostic instrument, providing information on mental stability, neuroticism, and psychoticism. This is one of the most commonly used psychological tests for diagnostic purposes and probably more is known about its reliability and validity than about any other (see Dahlstrom and Welsh, 1960, for a general review). This test provides information on three validity scales, on 8 clinical scales - hypochrondriasis, depression, hysteria, psychopathic deviate, paranoia, psychasthenia, schizophrenia, and hypomania, and two non-clinical scales - masculinity - femininity and social interest.

Scores on all of these are converted into T-scores and then placed in profiles for comparison with normative populations.

II - RESULTS

(1) Social Characteristics of the LSD Users

(a) Age and Sex

The age range for the 100 LSD users employed in this study was from 15 to 37 years. However, 66 per cent of this group were between the ages of 17 and 21; the mean age was 20.36 years. The LSD users were predominantly male (81%). Since the 46 non-users were matched for these variables, there was no significant difference between controls and LSD users in age or sex.

(b) Marital Status and Number of Children

As expected, because of their age, most LSD users were single (87%). Marriages among the remaining 13 per cent of the users had proven to be relatively unstable, with about half ending in divorce of separation. There was no significant difference between the LSD user group and control group in marital status. The number of married control subjects was very small (4 of 46) but none were divorced or separated.

A significantly greater proportion of the LSD user, than non-user, population had children. When data on marital status and number of children are combined, it is seen that of the 12 LSD users who had fathered one or more children 8 were single, 3 were divorced or separated, and only one was married. In the control group only one person had a child and he was married.

(c) Place of Birth and Ethnic Origin

The majority (80%) of the LSD users were born in Canada but fewer than 50 per cent were born in Toronto. Of the other LSD users born in Canada the most frequently mentioned places of birth were other areas of Ontario, and Montreal. However, there was no significant differences in place of birth between the LSD users and controls. Few differences were found between the LSD users and controls in ethnic origin, and both were predominantly of Anglo-Saxon origin. (LSD users: 57% and controls: 63% Anglo-Saxon). However, there were ten times as many listing themselves as "Hebrew" in the user group compared to the non-user group.

(d) Religion

Most differences between LSD user and control subjects in religious background are also non-significant. Slightly over half of both groups were Protestant, and the proportions of Catholics and Protestants were not different. However, there were twice as many Jewish LSD users as non-users (18 compared to 4).

There was a small but noticeable number of LSD user subjects ($n = 7$) who had converted from their family religion to Zen Buddhism. Most of these subjects were originally of Protestant religious background. No similar incidence of conversion was reported by the control subjects.

Despite the similarities in religious background, there was a significant difference between the LSD users and controls in practising their religion ($p < .01$), defined as attending a religious service once per month or more. Twelve per cent of the LSD users were practising a religion as compared to 34.8 per cent of the controls. Most of the LSD

users who were practising a religion were followers of Zen Buddhism (7/12), while all of the controls were practising their family religion.

(e) Father's Education and Occupation

No significant difference in education was found between the fathers of the LSD user and control subjects. In both groups a large number of the fathers were well educated (27 per cent of the fathers of LSD users and 30.4 per cent of the fathers of control subjects had attended university). Over half of both groups had completed four years of high school.

The data concerning father's occupation was first classified according to 5 broad categories, (1) professional, (2) managerial, (3) proprietorial, (4) white collar, and (5) blue collar. There was no significant difference in father's occupation between LSD user and control subjects when classified according to these categories. As would be expected from the high education level of many fathers, over a third of fathers of both groups fell into the highest occupational categories, professional and managerial. Only about 20 per cent were categorized as blue collar workers (Table 1).

Since the five occupational categories did not systematically take account of the income, and education involved in certain occupations, the data was classified according to Blishen's (1958) Occupational Class Scale. This occupational scale included 343 occupations ranked on the basis of average years of schooling and average income for those in the occupation. Because the responses of the subjects were more general than the occupational titles listed by Blishen, his 7 occupational classes were collapsed to 5. This was achieved by combining classes 3 with 4, and 6 and 7.[3]

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[3] Since no alteration was made in the relative ranking of occupations and Blishen's classes were arbitrarily defined, it was felt that this modification would not distort the data.

Again, no significant difference was found in occupational classes between fathers of LSD users and controls. Almost half of the fathers in both groups fell into classes 1 and 2, using this scale (47 per cent of the LSD user group and 47.8 per cent of the control group (Table 2).

(f) Mother's Education and Occupation

There were no significant differences between the mothers of LSD users and non-users in education or occupation. As was found with the fathers, the mothers were comparatively well educated; over 60 per cent of the mothers of both groups had completed at least 4 years of high school. The data on mother's occupation were categorized as simply housewife or employed, and no significant group differences appeared.

In summary, no significant differences were found in social class background between the LSD user and control subjects. In both groups the majority were from middle and upper middle class families.

(g) Education and Occupation of LSD users and Non-Users

The LSD users had significantly less education than did the non-users. Only 54 per cent of the LSD users had completed at least 4 years of high school compared to 73.9 per cent of the non-users. Also, more non-users had gone on to post-secondary levels of education. However, 43 of the 46 controls were students compared to 30 of the 100 LSD users. This selection bias could have been an important factor in the significant difference found with education level. While many of the LSD users had dropped out of school, many expressed their intention to return in the next school year.

The data on present occupation for both groups was divided into three categories, - employed, unemployed, and student. As mentioned above, almost all of the controls, but only 30 per cent of the LSD users, were students. Very few of the remaining LSD users held steady full time jobs. Thirty-eight per cent of the LSD user group were, at the time of testing, unemployed and about a third of those employed worked part-time.

(2) Drug Use

(a) Alcohol

The majority of both groups drank alcoholic beverages but few drank frequently. More than 50 per cent of both groups fell into the lowest two categories - rarely (twice per month or less), and never. However, almost twice as many non-users as users drank as frequently as three times per week.

(b) Psychoactive Drugs

Most LSD users had frequently taken tranquillizers, barbiturates, anti-depressants and stimulants. About 85 per cent of the LSD users but only 39 per cent of the non-users had used these psychoactive drugs.

Table 3 shows the frequency of psychoactive drugs used in the two groups. Seventy per cent of the LSD users had taken stimulants, the majority more than six times; only 20 per cent of the non-users had used them and most fewer than three times. Tranquillizers had been taken frequently by almost half of the LSD users but by few of the controls. Many more of the LSD users than non-users had taken barbiturates

(33 per cent and 7 per cent) and anti-depressants (28 per cent and 0 per cent). However, these latter two types of drugs were less popular among LSD users than stimulants or tranquillizers.

As would be expected, LSD users and non-users obtained their drugs from different sources. Sixty per cent of the psychoactive drugs taken by non-users were obtained from a physician compared to only 25.4 taken by the LSD users. Friends were the most common source of drugs for the LSD users but few non-users obtained drugs in this manner.

The reported motivations for use varied for the psychoactive drugs (Table 4). Replies to the question "Why were these pills taken?" were categorized separately for each drug. Large differences in reported motivation between LSD users and controls were found in the use of stimulants. The majority of LSD users took stimulants to get "a high," or for "kicks," or curiosity, while the non-users reported taking them primarily to stay awake, ease fatigue, or for extra energy. While more LSD users than non-users had taken the other drugs for "kicks," or curiosity, the most frequent reasons for both groups were closely related to their medicinal use; (i.e., tranquillizers were taken primarily to keep calm, and because of nervousness or anxiety; barbiturates were taken most frequently to relieve pain or for sleep).

(c) Marijuana

All of the LSD users had also used marijuana and the majority many times (61 per cent had used marijuana over 100 times). While 26.9 per cent of the controls had tried marijuana, most of them had used it only a few times.

In reply to the question "What were the effects (of marijuana) for you?" the LSD users most frequently reported a feeling of relaxation, sometimes compared to the effect of a tranquillizer. Mild euphoria was the most common effect. Other notable effects in order of frequency were increased sensitivity, primarily to colours and sound, self or other insight, and distortions of time and space. In contrast, the most frequently reported effects given by the non-users were increased sensitivity, primarily to colours and sounds, mild euphoria, and distortions in space and time perception. The most noticeable difference between the LSD users and non-users was that only one of the 13 non-users who tried marijuana reported a relaxing effect, while this was the most frequent effect for the LSD users.

There was no significant difference between the LSD users and non-users in their reported frequency of unpleasant effects from marijuana. About half of each group reported that they had at some time experienced unpleasant effects. Those most frequently reported were physical illness or physical discomfort (i.e., nausea, headaches, sore throat, etc.), paranoia, and unpleasant psychological reactions (i.e., fear, depression, anxiety, etc.).

Both groups were also asked for what they felt to be the benefits of marijuana. For the LSD users, the replies given, in order of frequency, were comparable to the reported effects, and only 7 per cent reported no benefit. However, 5 of the 13 non-users who had taken marijuana said that there were no benefits in smoking marijuana.

(3) LSD Use (LSD Users Only)

(a) Frequency of Use

The range in the number of occasions subjects in the LSD user group had taken LSD was very large, 1 to 400 times. However, most users had taken it fewer than 10 times (median = 7.27 occasions), while 11 per cent had tried it only once. Compared to the use of marijuana the majority of these subjects had used LSD much less frequently (61 per cent of them had used marijuana more than 100 times).

(b) Effects and Benefits of LSD

The effects of LSD most frequently reported by the LSD user subjects concerned distortions or changes in their perception of the environment. Many subjects had experienced visual hallucinations and enhanced perception of colours and sounds. Colours in particular seemed to be brighter. Some reported the distortion of objects, space, and time or a sense of unreality, as if they were living in a dream world. Less frequently observed effects concerned the abilities of the individual to concentrate and to understand certain facets of themselves and their environment. LSD reportedly gave some deeper self-insights, increased abilities to meditate and to focus their attention, and increased understanding of situations and other people. Finally, a few reported that LSD produced a mild euphoria.

The LSD users were also asked what they felt were the benefits of LSD for them. The most frequent reply attributed a therapeutic quality to the drug. For example, many claimed that LSD helped them to

work out their problems, better adjust to society, or improve interpersonal relationships. Other reported benefits of LSD were very similar to the effects mentioned above, such as self-insight, increased awareness and understanding of situations. Surprisingly,11 per cent of the subjects stated that there were no benefits from using LSD.

(c) Adverse Reactions

In answer to the question, "Did you have any unpleasant effects from LSD?" 63 per cent of the users replied, "Yes." The most common complaint was an overwhelming state of fear or panic, sometimes involving terrifying hallucinations. Other reported adverse reactions, in order of frequency, were suicidal thoughts, paranoia, and physically ill effects. A few reported a recurrence of effects and/or prolonged reactions but none reported convulsions.

(d) Motivations for LSD Use and First Contact

About half (56%) of the LSD users felt that they had initially used LSD out of curiosity. Some had just heard about it from other people and wanted to try it, while others had read extensively about the drug before experimenting themselves. A much smaller number (17%) said they began to use LSD because their friends used it. Eleven per cent of the subjects reported that they had heard it was "better than" marijuana, which they were smoking at the time, and so had tried it for this reason. About half received their first LSD from friends and the remainder from other illicit sources.

(4) Psychological Results

(a) Intelligence

There was no significant difference between the LSD user group and the control group in mean IQ (Otis Quick-Scoring Mental Ability Test, Gamma Form AM). The mean for the LSD user was 115.13 and 117.50 for the controls. Ranges were large, 89 - 135 for the LSD users and 98 - 134 for controls; however, the median closely approximated the mean for both groups. Two of the LSD users' IQs were not included in any of the computations; one subject was Swedish and did not read English well and the other was ill and unable to finish the test.

Both populations were well above average in intelligence. When the data was classified according to Wechsler's system (Muller, 1966), 41 per cent of the LSD user group and 50 per cent of the control group fell into the highest two categories, superior and very superior (Table 5). Only 2 per cent of the LSD users and none of the controls were classified as dull normal, slightly below average.

Cronbach (1960) presented the educational expectancies at various levels of mental ability. The mean IQ of freshmen in a typical four-year college was 115 and the mean for college graduates 120. In our groups, the LSD users' mean educational level was the end of grade 11, approximately, and the beginning of first year university, approximately, for the controls. (Only an approximation can be given since it is not possible to equate the different forms of post-secondary education). Age must be taken into account here since a large number in both groups were younger than college age (i.e., below 19) and, therefore, would not

be expected to have this educational level. However, there was less than one year difference in mean age between the groups. With this consideration in mind, it would appear that the control group closely approximated or slightly exceeded their expected education level while the LSD user group was below the expected level.

(b) Minnesota Multiphasic Personality Inventory

(i) Validity Scales

In determining the validity of the MMPI profiles three special scales are scored - these are the L, F, and cannot say (?) scales. Specific cutting scores are set for them so that if scores on an individual record exceed them, the entire record is taken to be invalid (Dahlstrom and Welsh, 1960). A profile was considered to be invalid if the L (Lie) score was above 7 (raw score), and/or the F (False) score greater than 17 (raw score), and/or a (cannot say)? score above 50.

According to these standards 22 of the 100 LSD users' and 3 of the 46 non-users' MMPI profiles were judged invalid. The LSD users' profiles were usually invalid because of elevation on the F scale (18/22). The three invalid profiles for the controls all had L (Lie) scores above 7, and none of these profiles had elevated F-scores.

The elevated F-score (above 17) for the LSD users coincided with high scores on the clinical scales, in particular, the S_c or schizophrenic scale. The mean T-score on the S_c scale for those LSD users subjects with F-scores above 17 was 97. This tendency for a rise in the S_c scale as the F-score increases was noted by Dahlstrom and Welsh (1960). They stated this "shows that the F-score is sensitive to some of

the personality mechanisms that operate in the scale for schizophrenia." Highly elevated F-scores (16-20 raw score), according to these authors, "(were) usually produced by patients with a frank psychosis, although they (were) also obtained from test subjects who (were) resistive to the test and to the assessment process."

(ii) The Clinical and Non-Clinical Scales (MMPI)

The LSD users had higher scores ($p < .001$) than the controls (not including invalid profiles) on scales Sc, - schizophrenia, Ma, - hypomania, Pd, - psychopathic deviate, Mf, -masculinity-femininity (for males only) and Hy, - hypochondriasis ($p < .01$) (see Table 6). The LSD user group had higher mean T-scores on all scales, with the exception of Si and Mf (for females only). When the invalid profiles were included the LSD users had significantly higher scores on D, Hy, Pd, Mf (for males only), Pa, Pt, Sc, and Ma.

On three of the scales the mean T-score (not including invalid profiles) for the LSD users falls above the "normal" range of variance, 30-70 (see Table 6). These were the psychopathic deviate scale, mean T-score of 70.79, Mf (for males only), mean T-score of 74.03 and Ma, with a mean T-score of 72.17. The mean T-score for the Sc scale was very close to 70 (69.86). However, as mentioned earlier, there was a tendency for high scores on the Sc scale to coincide with high scores on the F (False) validating scale. The mean T-score on the Sc scale with the invalid profiles included was 74.54. In general, then the LSD users' MMPIs were marked by psychopathic, schizophrenic, and neurotic (Ma, Hy) deviations.

(iii) MMPI Profile Analysis: Differential Diagnosis

To analyze the profiles of the LSD users and non-user controls a system of differential diagnosis suggested and clinically validated by Meehl (Welsh and Dahlstrom, 1956) was adopted. His system involved a rapid inspectional diagnosis which first divides the profiles into normal and abnormal. A second inspection provides a differential diagnosis of abnormal patterns into three categories, (1) psychosis, (2) psychoneurosis and (3) "conduct disorder." (For diagnostic criteria see Appendix, Table 32).

Ninety-six per cent of the LSD users' profiles were judged to be abnormal, that is having a score of 70 or above on one or more of the eight clinical scales. A large number of these abnormal profiles did not fit the suggested criteria for any of the three diagnostic categories (Table 7). However, 25 per cent of the LSD users clearly followed the criteria for "conduct disorder." This category was mainly defined by a peak on Pd, or the psychopathic deviate scale, a pattern which is thought to provide "evidence of lack of social conformity or self-control and a persistent tendency to get into scrapes" (Dahlstrom and Welsh, 1960, p. 188). Another 17 per cent of the LSD users' profiles displayed a psychotic pattern with an elevated right-hand end of the profile curve and in particular a peak at Sc (schizophrenia). An elevated F-score is also a criterion for the psychosis category. However, in most of the profiles with this pattern the F was elevated beyond the cutting-point for inclusion as valid profiles. This made it difficult to assess whether these profiles reflected psychotic tendencies or were just false positives. Psychoneurosis was almost non-existent in this group. Only one per cent of the profiles clearly displayed this pattern.

The profiles of the non-users were very different. Only 46 per cent of their profiles were judged abnormal. Again, a large number were unclassifiable. However, 11 per cent (5) in the non-user group were categorized as psychosis, and all of these were valid profiles. Psychoneurosis was also very low in this group. In contrast to the LSD users, only 2 (1 person) per cent of the non-user profiles displayed the "conduct disorder" pattern.

The large number of abnormal but unclassifiable profiles occasioned another inspection. Among the LSD users a fourth type of profile configuration for which no label seemed adequate, was common to 14 per cent. This pattern included 3 peaks, one on the Ma (hypomania) scale, another on the Pd (psychopathic deviate) scale and the third on the Sc (schizophrenia) scale. Only one (2%) of the non-users displayed this pattern. This configuration would appear to be a combination of Meehl's psychosis and "conduct disorder" categories. However, no behavioral description was available for this type of pattern. Individuals with peaks on the Pd and Sc scales were described by Dahlstrom and Welsh (1960) as "unpredictable, compulsive, and non-conforming" and they had educational and occupational histories characterized by "underachievement, marginal adjustment, and uneven performance." Those with Pd and Ma peaks were described as "overactive, impulsive, irresponsible, and untrustworthy, shallow and superficial in their relationship," with "easy morals, readily circumvented consciences, and fluctuating ethical values." Since this latter type of pattern was also included in the "conduct disorder" criteria, LSD users' profiles so classified were again re-examined. A total of 34 per cent of the LSD user group displayed this pattern of peaks at Pd and Ma.

(iv) Selected Special Scales for the MMPI

The MMPI responses of the LSD user and control subjects were scored for eight special scales (see Table 8). These were the Ec, escapism scale devised by Beall and Panton (1956), - the Es, ego strength scale by Barron (1953); the Pd_1, familial discord; Pd_2, authority problems; Pd_{4A}, social-alienation; and Pd_{4B}, self-alienation, devised by Harris and Lingoes (1955); Pq, psychotic tendencies factor by Comrey and Marggraff (1958); and the Un, underachievement devised by McQuary and Truax (1955).

The mean differences (invalid profiles not included) between LSD users and controls on six of these special scales, Ec, Es, Pd_1, Pd_2, Pd_{4A}, and Pq were highly significant ($p < .001$). There was also a significant difference between the groups at a lower confidence level ($p < .05$) on the Pd_{4A}, social-alienation scale. From these sub-scales it would appear that the LSD users show a greater tendency or desire to escape from restrictions, have a higher incidence of familial discord, more authority problems, and feel more socially and self-alienated than the control group. In agreement with their scores on the clinical scales of the MMPI the LSD users showed more tendency toward psychoticism (scale Pq) than did the controls. The LSD users had lower scores than the controls on the ego strength scale, which may be interpreted as a measure of ability to deal with environmental pressures or as a measure of self control.

No significant difference was found on the underachievement scale. Because both groups had similar mean IQ's, while the controls had a significantly higher educational level, the validity of this scale is placed in some doubt.

(v) MMPI Scales and Frequency of LSD Use (LSD Users Only)

Since there was a wide range in the number of times the user group had taken LSD (1 - 400 times), and 11 per cent had used the drug only once, scores on the MMPI clinical scales, Ma, Sc, and Pd, and on the eight special scales, were assessed in terms of the number of times LSD was taken. No significant differences were found among groups on these scales, with the exception of the Ec (Escapism) scale. On the Ec scale the group which had taken LSD only once had the highest scores and the subjects having taken it over 31 times the lowest scores ($p < .05$).

(c) Personality (TAT), Fantasy

The 10 TAT stories given by each subject were scored according to a check list empirically derived by Eron (1950) with the addition of 12 new themes by the authors. Eron organized these themes into two major groups; 1) those indicating disequilibrium or tension and 2) those indicating equilibrium or adjustment. These groups were further subdivided into interpersonal, intrapersonal, and impersonal categories. (The list of themes was presented in Appendix Table 34). The data obtained was statistically analyzed, by means of t-tests, on the basis of the frequency with which each subject gave a certain theme in his 10 TAT stories.

There was a small but significant difference between the groups in productivity of themes ($p < .05$). The mean number per subject for the LSD user group was 22.78 and for the controls 20.57.

The 35 most popular themes were arranged in order of frequency of occurrence in Table 9. Themes of disequilibrium in parent-child or partner relationships were frequently given and common to both groups. In particular, the theme given most often was Parent Pressure - where the parent or parental figure was compelling, censuring, quarrelling with or punishing the child. Two other popular themes with a total frequency above 100 were Aspiration - hoping for the future, dreaming of the future, and dètermination, and Vacillation - putting off a task, loitering, or wasting time. Again, these latter themes were common to both groups.

When the data for the LSD users and controls on the 35 most popular themes (total frequency above 25) were compared, significant differences were found for only three. These were (1) Drug Use, ($p < .001$), in which the subject depicted characters taking drugs, showing concern over their use, or the effects of drugs, (2) Illicit Sex, ($p < .01$), extra- or pre-marital heterosexual relationships and (3) Behavior Disorder, ($p < .025$), personal maladjustments, neurosis, psychosis, withdrawal.

Since many of the LSD user subjects participated in a sub-culture in which drug use and sexual freedom were important and accepted practices, the higher frequency of such themes in comparison with control subjects would be expected. The higher frequency in Behavior Disorder, themes for the LSD user group tended to coincide with the MMPI results, where they also showed elevations on a number of the diagnostic scales.

III - TREATMENT FOR MENTAL HEALTH PROBLEMS

The majority of LSD users (51%) had undergone treatment or consultation for mental health problems, compared to only 17.4 per cent of the control subjects. The most frequent type of aid sought was from a psychiatrist, and often a number of visits were required. The approximated median for the number of visits to a psychiatrist by subjects in both groups seeking such aid was between 4 and 7.

Twenty-two per cent of the LSD users had required extensive periods of therapy, involving more than 10 visits to a psychiatrist, psychologist, or mental health clinic. Five (5%) of the LSD users had been in-patients in a mental hospital. Few of the controls (6.5% or 3 subjects) had made as many as 10 visits.

The reasons for consultation varied widely; however, there were noticeable differences between LSD users and control groups. LSD users were frequently seen for behaviour disorders and treated for excessive anxiety, depression, hallucinations, paranoia, suicidal tendencies, and homosexuality. Family problems were also frequently stated to be the reasons for consultations. In most cases the subject did not elaborate; however, it appeared that family relationships were not harmonious; and parents usually instigated consultations for the LSD user. In contrast, the most frequent reason given by the controls fell into the category of school problems; they had difficulties in their school work, were excessively tense over exams, unable to concentrate or unable to complete assignments. Only 2 of the LSD users reported visiting a mental health facility because of their LSD experiences.

IV - DISCUSSION

This study shows that LSD users share certain social, personality and demographic characteristics, as well as drug use habits. Most are single males, under 25, and from families in the two highest social classes. Their parents have obtained better educations than the population as a whole and their fathers have predominantly professional and managerial occupations. Most LSD users were not employed full-time (80%), although only 30 per cent were students. Compared to the non-user group the LSD users were more often married, they had fathered more children (in and out of marriage), less frequently attended church, and were less often in school or employed full time. There were no differences between the two groups in age, sex, or social class (the matched variables) nor in place of birth. However, twice as many LSD users as non-users were Jewish. It is interesting to speculate that the Jewish moderation for alcohol means that alcohol cannot be taken as an aid to problem solving and that other drugs must be substituted.

Data from this study shows LSD use to be largely a middle and upper class phenomenon. Almost half of the users were from the two highest classes, compared to only about 11.6 per cent (Porter, 1965) of the general population. Only 7 per cent were from the lowest class compared to 28.9 per cent (Porter, 1965) in the general population. LSD usage then has a social class pattern similar to that of marijuana and psychoactive drugs, but different from that of heroin (Chein, 1956) and solvents such as glue (Press and Done, 1967), which are used primarily by lower class persons. At present, the reasons for LSD use in the upper

social classes are unclear. Factors of availability, affluence, intellectual curiosity can be suggested, but none seem especially compelling as explanations. Most believed that they began LSD use because of curiosity or because their friends used it. Perhaps this sort of curiosity is essentially a middle class phenomenon. Reiff (1966) has noted that middle class persons in general are motivated to actualize their selves, and part of the ideology of LSD use is that it aids in self-exploration and self-enhancement.

The data for IQ and education, when taken together, indicate that the LSD users are underachievers. Their IQs and ages were similar to the non-users but they had achieved several years less education. Although most had dropped out of school (70%), many said that they planned to return soon. It may be that eventually this underachievement would be overcome. However, it seems that heavy use of hallucinogenic drugs is incompatible with school attendance for most LSD users.

The LSD users had taken hallucinogenic drugs far more often than the non-users. Some of the latter (27%) had tried marijuana but none had tried LSD, and marijuana seems to have far greater general acceptance. The LSD users seemed to get relaxation and euphoria from marijuana, while the non-users experienced mainly sensory modifications. It would be interesting to know whether these effects are produced by different expectations and whether their nature is related to continuing usage. LSD users more often reported substantial benefits from marijuana (relaxation and euphoria) and 5 out of 13 non-LSD users found no benefit in marijuana.

LSD users reported the usual visual and emotional effects of LSD, and many also attributed therapeutic qualities to the drug. Most claimed that LSD facilitated some social or personality adjustments. However, about 11 per cent reported no benefit from using LSD. As well, more than 60 per cent reported adverse reactions from LSD, mostly involving panic or frightening halluninations. Possibly their group identifications force LSD users to take LSD even when their prior experiences have been neutral or unpleasant.

Although this began as a study of LSD users, it is clear that multihabitation is far more common than devotion to one or a few drugs. All of the LSD users had tried marijuana - the majority of them on many occasions, and 11 per cent said that they tried LSD because it was "better than marijuana." In addition, many had used amphetamines, tranquillizers and barbiturates for "kicks", curiosity or euphoria. In fact, alcohol seemed to be the only readily available drug not regularly used for mood or perceptual modification. The variety of drugs taken by the LSD users suggests that they are not seeking any particular perceptual or emotional change. Amphetamines, LSD, and marijuana differ so widely in their particular effects that the multihabituated user must be seeking a general change in perceptual or feeling states. Perhaps, their own selves are aversive and they aim by drug use merely to change but not to change in any special way.

Some indirect support for this proposition is provided by the psychological results. There was an extremely large number (96%) of abnormal MMPI records. However, many of these profiles did not fit into the categories used for differential diagnosis. The most usual diagnosis

given was conduct disorder (25% of the LSD users), followed by psychosis (17%). There were almost no psychoneurotic patterns in the records. This pathology was also reflected in the TAT results where many stories of behavioral disorders were found, and in the data on previous psychiatric treatment. Half of the LSD users had been treated, many extensively for psychological disturbances. It might be thought that their disturbances were created mainly by drug use but this seems not to be the case. Most of the psychiatric consultations predated LSD use and only a very few were concerned with drug-induced problems. As well, no relationship was found between pathology on the MMPI and number of LSD ingestions. That is, the least frequent user of LSD showed no less psychological disturbance than the chronic user. The conclusion must be that the LSD users show far greater psychological disturbance than the controls and that much of this disturbance predated drug use. Perhaps, the use of hallucinogens is mainly a response of middle class young people to emotional disturbance.

Another proposition could also be put forward as an explanation for drug use among some of the subjects. A fairly large percentage of the LSD users' profiles were diagnosed as "conduct disorder" and on re-examination a number of the unclassified abnormal profiles showed a pattern of three peaks, Pd, Ma, and Sc. These configurations suggest a tendency toward social non-conformity and rejection of traditional values and restrictions. To some then, drug taking may be the chosen pattern of expressing their rejection of and deviance from the present social system. If this is the case, the type of drug would be unimportant, as long as it is unacceptable to the larger society. For example, alcohol may not be popular simply because it is acceptable.

The non-clinical scales of the MMPI also provided a picture of alienation and emotional difficulty. These scales showed that LSD users are more escapist, and feel more socially and self-alienated than do the controls. Also, they had experienced more familial discord, more authority problems, and had less ego-strength to deal with the emotional and social difficulties created by their disturbances. Their lower ego-strength and higher tendency to psychoticism suggests that their emotional difficulties may be of long duration. Some of these differences may have developed or increased after their drug use began but they fit closely to the MMPI findings, and perhaps they predated hallucinogenic drug use. In any case, these difficulties would seem to present major barriers to rapid change.

TABLE 1

FATHER'S OCCUPATION		
Occupation	LSD Users	Non-Users
Professional	17	7
Managerial	19	13
Proprietorial	7	1
White Collar (Sales, Clerical)	28	13
Blue Collar	20	10
Unknown	9	2
TOTAL	100	46

TABLE 2

FATHER'S OCCUPATIONAL CLASS
(Blishen's Occupational Class Scale)

Occupational Class*	LSD Users	Non-Users
Class 1	7	3
Class 2	40	19
Class 3	18	8
Class 4	19	12
Class 5	7	2
Unknown	9	2
TOTAL	100	46

*Blishen's original 7 classes were collapsed to 5 by combining classes 3 with 4 and 6 with 7

TABLE 3

FREQUENCY OF USE OF PSYCHOACTIVE DRUGS

How often have you taken any of the following? LSD Users

	Number of Times						
	1	2	3	4	5	6 +	Total
Tranquillizers	9	6	3	2	0	29	49
Barbiturates	3	3	3	1	0	23	33
Anti-Depressants	1	4	2	0	0	21	28
Stimulants	6	9	9	2	2	42	70

Taken none of these 15

How often have you taken any of the following? Non-Users

	Number of times						
	1	2	3	4	5	6 +	Total
Tranquillizers	0	0	1	1	0	4	6
Barbiturates	2	2	1	0	0	2	7
Anti-Depressants	0	0	0	0	0	0	0
Stimulants	2	1	2	0	0	4	9

Taken none of these 28

TABLE 4

WHY WERE PSYCHOACTIVE DRUGS TAKEN?

	LSD Users	Non-Users
Stimulants		
1. To stay awake (ease fatigue or for extra energy)	22	7
2. For a high or for kicks	33	2
3. Curiosity	16	0
4. Modify mood	3	1
5. Other	4	0
Tranquillizers		
1. To keep calm (calm nervousness, anxiety)	21	4
2. For kicks	9	0
3. Curiosity	8	0
4. Modify mood	4	0
5. Other	5	2
Barbiturates		
1. Pain	9	2
2. Sleep or relax	7	4
3. Kicks or fun	5	0
4. Curiosity	4	0
5. Other	4	1
Anti-Depressants		
1. Improve mood (depression)	8	0
2. For high or kicks	7	0
3. Curiosity	2	0
4. Other	2	0

TABLE 5

CLASSIFICATION OF INTELLIGENCE FOR LSD USERS AND NON-USERS USING WECHSLER'S SYSTEM

Classification	IQ Limits	LSD Users % of Group	Non-Users % of Group
Defective	65 and below	0.00	0.00
Borderline	66-79	0.00	0.00
Dull Normal	80-90	2.04	0.00
Average	91-110	27.55	28.26
Bright Normal	111-119	29.59	21.74
Superior	120-127	27.55	34.78
Very Superior	128 and over	13.27	15.22
TOTAL		100.00	100.00

TABLE 6

COMPARISON OF THE MEAN T-SCORES ON THE
MMPI CLINICAL AND NON-CLINICAL SCALES
INCLUDING AND EXCLUDING INVALID PROFILES OF LSD USERS AND NON-USERS

Scales	LSD Users		Non-Users	
	$\bar{X}$ + Invalid	$\bar{X}$ - Invalid	$\bar{X}$ + Invalid	$\bar{X}$ - Invalid
H_s	55.68	53.87	52.54	52.30
D	61.68	58.40	56.13	56.67
H_y	62.31	61.12	57.48	57.19
Pd	72.28	70.79	56.91	57.00
Mf M	74.01	74.03	64.83	65.15
Mf F	43.16	43.67	48.00	48.00
Pa	61.94	59.26	56.41	56.58
Pt	64.27	61.76	58.65	58.65
S_c	74.54	69.86	61.57	61.65
M_a	73.07	72.17	62.15	62.09
S_i	52.53	50.56	50.61	51.40

TABLE 7

MMPI PROFILE ANALYSIS: MEEHL'S SYSTEM OF DIFFERENTIAL DIAGNOSIS

LSD USERS

Normal	Abnormal				
	Psychosis	Psycho-neurosis	Character Disorder	(Pd, Ma, Sc) Combination [1]	Abnormal Unclassifiable
3	17 [2]	1	25	14	39

NON-USERS

Normal	Abnormal				
	Psychosis	Psycho-neurosis	Character Disorder	(Pd, Ma, Sc) Combination	Abnormal Unclassifiable
25	5	1	1	1	13

[1] Category not included in Meehl's system.

[2] 12 were invalid.

TABLE 8

COMPARISON OF THE MEAN RAW SCORES, ON SELECTED SPECIAL SCALES FOR THE MMPI OF LSD USERS AND NON-USERS

Scale	LSD Users		Non-Users	
	X + Invalid	X - Invalid	X + Invalid	X - Invalid
Ec (Escapism)	20.19	19.33	16.26	16.53
Es (Ego Strength)	42.84	44.29	47.63	47.40
Pd_1 (Familial Discord)	5.22	4.85	2.91	3.05
Pd_2 (Authority Problems)	6.27	6.15	4.07	4.02
Pd_{4A} (Social Alienation)	7.04	6.54	5.41	5.53
Pd_{4B} (Self-Alienation)	5.78	5.17	3.74	3.84
Pq (Psychotic Tendencies)	3.80	3.27	1.67	1.79
Un (Underachievement)	11.67	11.72	11.59	11.63

TABLE 7

THE 35 MOST FREQUENT TAT THEMES GIVEN BY LSD USER GROUP AND NON-USER GROUP

No.	Code		LSD Users	Non-Users	Total
			f	f	Total f
1	$1A_{1a}$	Parental Pressure	128	69	197
2	1_{B1}	Aspiration	87	60	147
3	$1A_{2a}$	Partner Pressure	84	40	124
4	$1B_{19}$	Vacillation	67	37	104
5	$1A_{2h}$	Illicit Sex*	78	22	100
6	$1A_{2f}$	Departure (from partner)	58	34	92
7	$1C_4$	Aggression toward environment	44	30	74
8	$1A_{1b}$	Succorance (parent)	48	25	73
9	$1C_6$	War	40	29	69
10	$1C_3$	Generalized Restrictions	39	27	66
11	$1B_9$	Fear	40	25	65
12	$1B_{8.5}$	Drug Use*	60	2	62
13	$1A_{1f}$	Departure (from parent)	38	22	60
14	$1C_2$	Legal Restrictions	42	14	56
15	$1A_{ii}$	Death or Illness (of parent)	35	21	56
16	$11B_4$	Retirement	32	20	52
17	$11B_8$	Contemplation	34	17	51
18	$1B_{23}$	Sad	33	17	50
19	$1B_4$	Behavior Disorder*	43	6	49
20	$1B_{31}$	Confusion	31	15	46
21	$1C_5$	Aggression from	24	18	42
22	$1C_1$	Economic Pressure	28	12	40
23	$1B_5$	Suicide	29	10	39
24	$1A_{1f}$	Defiance (of parent's wishes)	29	10	39
25	$1A_{2b}$	Succorance (partner)	27	10	37
26	$11A_{2c}$	Contentment	25	12	37
27	$1B_2$	Inadequacy	29	7	36
28	$1B_{30}$	Alienation	28	8	36
29	$1A_{2u}$	Childbirth	27	9	36
30	$1B_3$	Curiosity	17	17	34
31	$1A_{2j}$	Death or Illness (of partner)	23	9	32
32	$1A_{1j}$	Death or Illness (of child)	25	7	32
33	$1A_{2r}$	Seduction	19	8	27
34	$1B_7$	Guilt	18	9	27
35	$11B_7$	Ordinary Activity	17	9	26

*Themes for which there was a significant difference between the two groups.

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APPENDIX

TABLE 1

AGE	LSD USERS	NON-USERS
15	1	1
16	5	1
17	10	9
18	16	4
19	15	3
20	12	7
21	13	4
22	9	4
23	6	3
24	1	3
25	4	1
26	5	4
27	0	0
28	1	0
29	0	1
30	1	1
-	-	-
37	1	0
TOTAL	100	46
Mean	20.36	20.74
Range	15-37	15-30

TABLE 2

SEX	LSD USERS	NON-USERS
Male	81	36
Female	19	10
TOTAL	100	46

TABLE 3

MARITAL STATUS	LSD USERS	NON-USERS
Single	87	42
Married	7	4
Divorced	2	-
Separated	4	-
TOTAL	100	46

TABLE 4

MARITAL STATUS AND NUMBER OF CHILDREN

MARITAL STATUS	LSD USERS		NON-USERS	
	Number with Children	Number of Children	Number with Children	Number of Children
Single	8	9	-	-
Married	1	1	1	1
Divorced	1	1	-	-
Separated	2	2	-	-
TOTAL	12	13	1	1

TABLE 5

PLACE OF BIRTH	LSD USERS	NON-USERS
Toronto	44	20
Ontario Outside Toronto	18	8
Canada Outside Ontario	18	6
Outside Canada	18	12
Unknown	2	-
TOTAL	100	46

TABLE 6

ETHNIC ORIGIN	LSD USERS	NON-USERS
Anglo-Saxon	57	29
French-Canadian	-	1
Canadian-Indian	1	-
W. European (France, Germany, Italy, Spain, Portugal)	14	3
E. European	13	7
Other	5	5
Hebrew	10	1
TOTAL	100	46

TABLE 7

RELIGIOUS BACKGROUND

RELIGION	LSD USERS*	NON-USERS
Protestant	54	27
Roman Catholic	16	9
Jewish	18	4
Mixed	7	-
Other	1	4
None	4	2
TOTAL	100	46

*7 of the 100 LSD users have converted to Zen Buddhism (5 were of Protestant background, 1 Jewish, 1 Mixed).

TABLE 8

PRACTISING RELIGION (1 per month or more)	LSD USERS	NON-USERS
Yes	12	16
No	88	30
TOTAL	100	46

TABLE 9

FATHER'S EDUCATION	LSD USERS	NON-USERS
Grade 8 or less	16	8
Grade 9 - 11	22	8
Grade 12 - 13	18	11
Trade School (In place of High School)	3	1
Post-Secondary Training- Art College, Teachers' College, Polytechnical Institutes	8	-
University	27	14
Unknown	6	4
TOTAL	100	46

TABLE 10

MOTHER'S EDUCATION	LSD USERS	NON-USERS
Grade 8 or less	14	4
Grade 9 - 11	19	8
Grade 12 - 13	35	22
University (1 or more years)	15	8
Post-Secondary - (business courses, technical courses, teachers' college)	15	4
Unknown	2	-
TOTAL	100	46

TABLE 11

MOTHER'S OCCUPATION	LSD USERS	NON-USERS
Housewife	40	25
Employed	54	18
Unknown	6	3
TOTAL	100	46

TABLE 12

LAST GRADE COMPLETED	LSD USERS	NON-USERS
8 or less	7	-
9	6	1
10	14	2
11	19	9
12	24	6
13	4	4
14 (1st University)	10	3
15 (2nd University)	8	2
16 (3rd University)	5	6
17 (4th University)	1	2
18 (Grad. School)	1	3
Post-Secondary Training- (Art School, Polytechnical Institute, Teachers' College; 1 - 3 years)	1	8
TOTAL	100	46

TABLE 13

PRESENT EMPLOYMENT STATUS	LSD USERS	NON-USERS
Employed	32	2
Unemployed	38	1
Student	30	43
TOTAL	100	46

TABLE 14

PRESENT OCCUPATION (Subjects Employed Only)	LSD USERS	NON-USERS
Part-time	12	-
Full-time	20	2
TOTAL	32	2

TABLE 15

HOW OFTEN DO YOU DRINK?	LSD USERS	NON-USERS
Frequently (3 times per week or more)	9	8
Sometimes (twice per week - 3 times per month)	28	12
Rarely (Twice per month or less)	37	19
Never	26	7
TOTAL	100	46

TABLE 16

FROM WHAT SOURCE WERE PILLS OBTAINED?	LSD USERS	NON-USERS
Physician	32	12
Family	9	1
Friends	52	2
Bought without Prescription	23	-
Drug Store	7	5
Other	3	-
TOTAL	126	20
Taken none of the pills	15	28

TABLE 17

HAVE YOU EVER SMOKED MARIJUANA?	LSD USERS	NON-USERS
Yes	100	13
No	-	33
TOTAL	100	46

TABLE 18

HOW OFTEN WAS MARIJUANA SMOKED?

TIMES SMOKED	LSD USERS	NON-USERS
1 time	-	3
2 - 10 times	9	5
11 - 20 times	7	1
21 - 30 times	3	2
31 - 40 times	3	-
41 - 50 times	7	-
51 - 60 times	1	-
61 - 70 times	1	-
71 - 80 times	3	-
81 - 90 times	-	-
91 - 100 times	5	1
101 - 1000 times	53	1
1001 +	8	-
TOTAL	100	13

TABLE 19

WHAT WERE THE EFFECTS FOR YOU?

LSD USERS

Euphoria	Increased Sensitivity to Colour, Sounds, etc.	Relaxation Tranquil-lizer	Self Insight Other " Meditation	Distortion of Time & Space Hallucination	Enhanced Creativ-ity	Paranoia	Enhanced Sociability
44	33	46	19	17	6	4	7

NON-USERS

Euphoria	Increased Sensitivity to Colour, Sounds, etc.	Relaxation Tranquil-lizer	Self Insight Other " Meditation	Distortion of Time & Space Hallucination	Enhanced Creativ-ity	Paranoia	Enhanced Sociability
3	7	1	1	3	1	1	2

TABLE 20

DID YOU EVER HAVE ANY UNPLEASANT EFFECTS FROM MARIJUANA?

	LSD USERS	NON-USERS
Yes	57	9
No	43	4
TOTAL	100	13

TABLE 21

UNPLEASANT EFFECTS OF MARIJUANA:

EFFECT	LSD USERS	NON-USERS
1. Paranoia	17	3
2. Physical illness or physical discomfort (nausea, headaches, pain, sore throat, loss of sensation in legs, poor coordination, blacked out)	30	5
3. Unpleasant thoughts and Reactions (fear, anxiety, depression, 'freaked')	17	2
4. Other	6	1

TABLE 22

WHAT BENEFITS ARE THERE FOR YOU IN SMOKING MARIJUANA?

BENEFITS	LSD Users	Non-Users
1. Relaxation (reduced anxiety, peace of mind)	34	-
2. Mood Elevator (euphoria entertainment)	33	2
3. Enhanced Sociability (more communicative, gets along better with others)	19	1
4. Greater understanding and appreciation of arts, nature and religion	17	2
5. Enhanced perception and sensitivity	16	1
6. Escape	10	1
7. (Greater) self-insight	8	1
8. Therapeutic (better adjustment - figure out own problems)	9	-
9. Enhanced Creativity	5	1
10. Other	15	1
11. None	7	5

TABLE 23

IF LSD TAKEN, HOW OFTEN?	(LSD USERS ONLY)	
1 occasion	11	11%
2 - 3 occasions	16	31%
4 - 5 occasions	15	
6 - 7 occasions	9	12%
8 - 9 occasions	3	
10 - 15 occasions	9	27%
16 - 20 occasions	9	
21 - 30 occasions	9	
31 - 40 occasions	2	
41 - 50 occasions	2	
51 - 60 occasions	4	
61 - 70 occasions	1	
71 - 80 occasions	-	19%
81 - 90 occasions	1	
91 -100 occasions	6	
101 -200 occasions	2	
201 + occasions (400)	1	
TOTAL	100	

Median 7.27

TABLE 24

WHAT WERE THE EFFECTS OF LSD FOR YOU?

EFFECTS	LSD USERS ONLY
1. Hallucinations	34
2. Enhanced perception and sensitivity (i.e., to colours and sounds)	28
3. Mood elevator (euphoria)	18
4. Self-insight	16
5. Greater ability to concentrate, meditate, focus attention	15
6. Distortion of objects, space, time, disorienting	14
7. Sense of unreality - dream world, utopia, separation of mind and body	14
8. Greater awareness and understanding of situations, environment, others	12
9. Similar to marijuana but intensified	10
10. Improved interpersonal relationships	9

TABLE 25

WHAT BENEFITS ARE THERE FOR YOU IN TAKING LSD?	
1. Therapeutic - better adjustments (i.e., through self-insight, working out of problems)	26
2. Self-insight	19
3. Increased awareness and understanding of situations	19
4. Improved interpersonal relationships	14
5. Broadens experience range	9
6. Pleasure, excitement	6
7. Enhanced creativity	5
8. Other	9
9. No benefits	11

TABLE 26

DID YOU EVER HAVE ANY UNPLEASANT EFFECTS FROM LSD? (LSD USERS ONLY)	
Yes	63
No	37
TOTAL	100

TABLE 27

UNPLEASANT EFFECTS FROM LSD (LSD USERS ONLY)	
1. Panic and fear	35
2. Suicidal thoughts	16
3. Paranoia	15
4. Physical ill effects	12
5. Recurrence of effects	9
6. Prolonged reaction	8
7. Homicidal thoughts	3
8. Assaultive behaviour	1
9. Convulsions	-
10. Other	5

TABLE 28

MOTIVATIONS FOR LSD USE (LSD USERS ONLY)

Motivations	Frequency
1. Curiosity	56
2. Friends used it	17
3. 'Grass is nice, acid is better'	11
4. Escape (situation hopeless, depression)	5
5. Wanted self-examination	3
6. Other	5
7. No specific reason	1
8. Not asked on questionnaire	2

TABLE 29

HOW DID THE USE OF LSD BEGIN - FIRST CONTACT? (LSD USERS ONLY)	
Obtained from friends	55
Easily available	36
Hunted it down	1
From a hospital	1
No reply	7
TOTAL	100

TABLE 30

IQ FREQUENCY DISTRIBUTION FOR THE LSD USER GROUP AND THE NON-USER GROUP

IQ	LSD USERS	NON-USERS
88-89	1	-
90-91	1	-
92-93	2	-
94-95	2	-
96-97	3	-
98-99	4	1
100-101	2	1
102-103	3	2
104-105	3	2
106-107	3	5
108-109	1	2
110-111	8	-
112-113	5	2
114-115	8	2
116-117	5	2
118-119	7	4
120-121	7	4
122-123	6	5
124-125	7	5
126-127	7	2
128-129	7	3
130-131	5	3
132-133	-	-
134-135	1	1
Mean ($\bar{X}$)	115.13	117.50

TABLE 31

MMPI VALIDITY SCALES
L (Lie), F (False), and ? (Cannot Say)

FREQUENCY OF SUBJECTS WITH RAW SCORES ABOVE 7 on L (Lie) SCALE	
LSD USERS	NON-USERS
3	3

FREQUENCY OF SUBJECTS WITH RAW SCORES ABOVE 17 ON F (False) SCALE	
LSD USERS	NON-USERS
18	-

FREQUENCY OF SUBJECTS WITH RAW SCORES ABOVE 50 ON (Cannot Say) SCALE	
LSD USERS	NON-USERS
1	-
TOTAL 22	3

TABLE 32

MEEHL'S* DIAGNOSTIC CRITERIA

PSYCHOSIS	PSYCHONEUROSIS	"CONDUCT DISORDER"
1. Markedly elevated profile	1. Less elevated profile	1. Elevations on Pd
2. High F	2. Lower F	2. Elevated Ma if not too high and especially with secondary peak at Pd
3. Sc greater than Pt	3. Pt greater than Sc	3. Neurotic triad low except for some Hy
4. Pa or Ma markedly elevated	4. Pa and Ma not much elevated	4. Psychotic end running about 60
5. The "psychotic" (right-hand) end of curve reaching level of "neurotic" (left-hand) end	5. Neurotic triad clearly elevated more than the rest of the curve	
6. Spike on D, with Hs and Hy scores falling far below D	6. Three scores of the triad closer to one another	

*Meehl, P.E. Profile analysis of the MMPI in differential diagnosis, in Welsh, G.S. and Dahlstrom, W.G. (ed.) Basic Readings on the MMPI in Psychology and Medicine. Minneapolis, Univ. of Minnesota Press, 1956, 294.

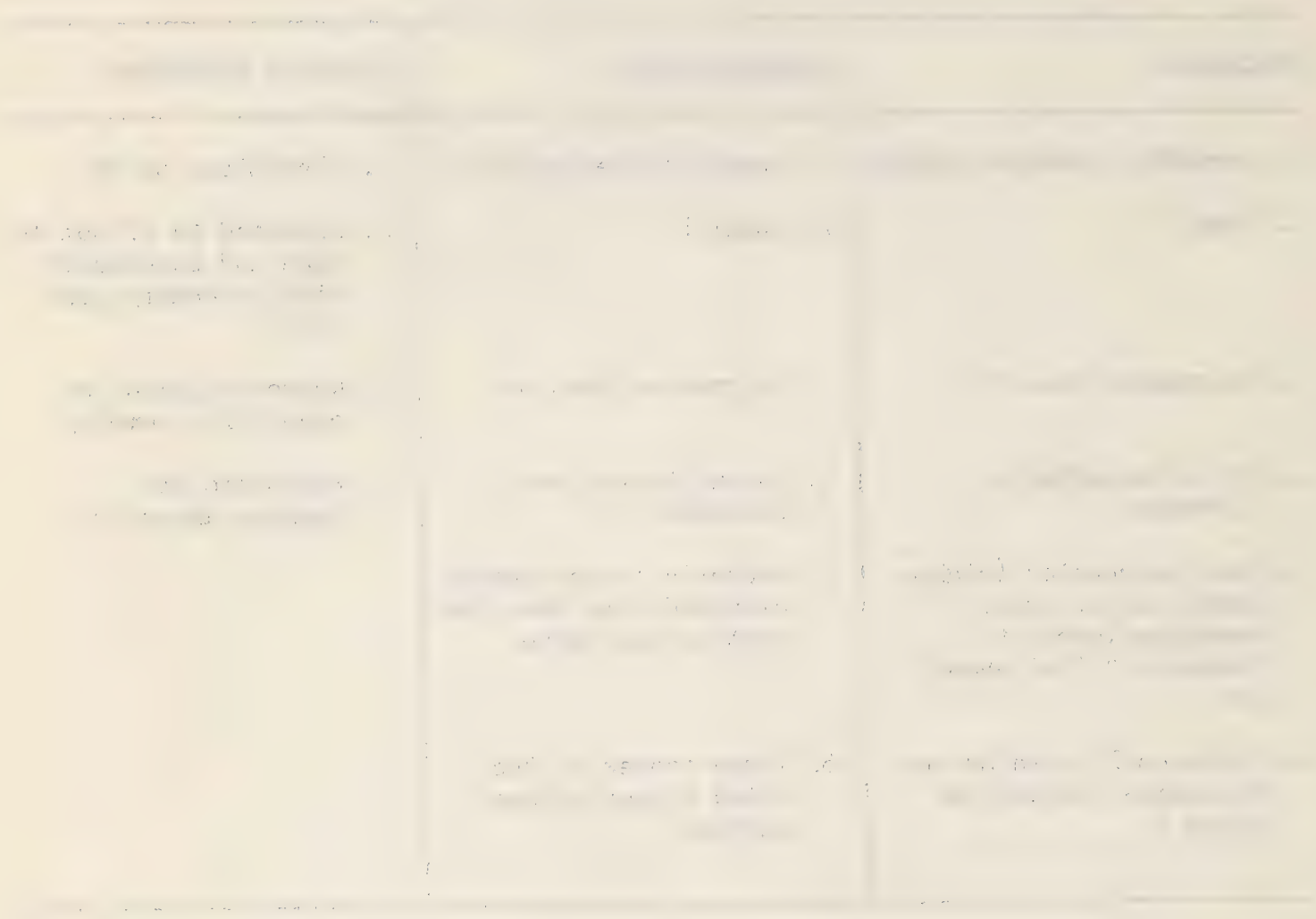

TABLE 33

NUMBER OF TIMES LSD TAKEN AND MEAN T-SCORES ON THREE OF THE MMPI CLINICAL SCALES

MMPI SCALE	NUMBER OF TIMES LSD TAKEN				
	1	2 - 5	6 - 9	10-30	31 +
Pd	70.00	72.19	68.50	70.71	68.85
Sc	76.00	69.15	65.67	69.71	70.08
Ma	74.56	71.00	68.83	70.88	76.00

TABLE 34

NUMBER OF TIMES LSD TAKEN AND MEAN RAW SCORES ON SELECTED SUBSCALES FOR THE MMPI

MMPI SCALE	NUMBER OF TIMES LSD TAKEN				
	1	2 - 5	6 - 9	10-30	31 +
Ec	22.33	19.04	19.67	19.25	17.85
Es	42.11	44.77	44.00	44.46	44.69
Pd_1	5.00	4.58	3.83	5.13	5.23
Pd_2	6.67	6.27	5.00	6.38	5.69
Pd_{4A}	7.89	7.00	7.17	5.88	5.62
Pd_{4B}	6.11	5.27	6.00	4.92	4.38
Pq	4.56	2.85	3.67	3.21	3.15
Un	12.89	11.50	12.33	11.38	11.69

ERON'S CHECK LIST OF THEMES FOR THE TAT

I. Disequilibrium (tension)
  A. Interpersonal
    1. Parent (includes parent substitutes such as older authority figures, etc.)
      a. *Pressure*—parent or parent figures are prohibitive, compelling, censuring, punishing, disapproving, interfering, checking up, disagreeing with, quarreling with, restraining or unduly influencing child.
      b. *Succorance*—child seeks or receives aid, help, advice, consolation, from parent.
      c. *Nurturance*—child bestows or offers aid, advice, consolation to the parent.
      d. *Aggression from*—physical harm inflicted or intended upon child by parent.
      e. *Aggression to*—physical harm inflicted or intended upon parent by child.
      f. *Departure*—child is taking leave of parental home, is separated from parents.
      g. *Concern*—parent is worried over physical or mental well-being of child.
      h. *Incest*—actual or contemplated.
      i. *Death or illness* of parent.
      j. *Death or illness* of child.
      k. *Disappointment to*—parent is disappointed in child's behavior or accomplishments.
      l. *Disappointment in*—child is disappointed by parent.
      m. *Filial obligation*—child feels it is his duty to remain with, comply with, or support parents.
      n. *Confession*—child tells parent of some misdemeanor or crime he has committed.
      o. *Bad news*—child brings bad tidings to parent (e.g., death of other parent, brother, etc.) or friend brings tidings of death of son.
      p. *Marriage*—child tells parent of past or impending marriage, parent objects to marriage.
      q. *Collusion*—parent and child are planning or executing together some antisocial act.
      r. *Parental conflict*—child is concerned over marital problems of parents.
      s. *Lost*—child has been abandoned by parents or is lost.
    2. Partner (wife, sweetheart, opposite-sexed peer).
      a. *Pressure*—partner is prohibitive, compelling, censuring, punishing, quarreling with, etc.
      b. *Succorance*—hero receives or seeks aid, comfort, consolation, assistance from partner.
      c. *Nurturance*—hero bestows or offers to partner, aid, consolation, advice, etc.
      d. (*Aggression from*—physical harm inflicted upon or intended for hero by partner.)*
      e. *Aggression to*—physical harm inflicted upon or intended for partner.
      f. *Departure from*—hero is leaving partner either temporarily or permanently or is separated from partner.
      g. *Concern*—hero is worried over physical or mental well-being of partner.
      h. *Illicit sex*—extra- or pre-marital heterosexual relationship, non-incestuous, includes "petting."
      i. *Illicit sex with violence*—rape.
      j. *Death or illness* of partner.
      k. *Disappointment to*—partner is disappointed in hero's behavior or accomplishments.
      l. (*Disappointment by*—hero is disappointed by partner).
      m. *Jealousy*—hero is jealous of partner's attention to others.
      n. *Competition*—hero is object of competition between two or more admirers.
      o. *Cuckold*—hero discovers partner has been having extra-marital relations or finds her raped.
      p. *Decision*—hero must choose between marriage and not or between two partners.
      q. *Pursuit*—hero is wooing or trying to get partner to submit.
      r. *Seduction*—hero is being talked into relationship or is being actively pursued.
      s. *Unrequited*—hero's love is unreturned, impotence.
      t. *Restraint*—hero and partner can't be married or have intercourse (because of economics, deformities, menstrual periods, etc.)
      u. *Childbirth.*
    3. Peer (like-sexed, approximately same age).
      a. *Pressure*—like-sexed peers are prohibitive, compelling, censuring, punishing, disapproving, interfering, restraining, etc.
      b. *Succorance*—hero seeks or receives aid,

* Themes in parentheses have not been found in original sample of 150 protocols but are included for completeness.

advice, consolation, from peer.
c. (*Nurturance*—hero bestows or offers aid, advice, consolation upon peer).
d. *Aggression from*—physical harm inflicted upon or intended for hero by peer.
e. *Aggression to*—physical harm inflicted upon or intended for peer by hero.
f. *Desertion*—hero has been deserted by his companions or is lost from them, or is departing from them.
g. *Concern*—hero is worried about physical or mental well being of his friends.
h. *Homosexuality*
i. *Death or illness* of friend.
j. *Belongingness*—desire expressed to be with or accepted by peers.
k. *Unappreciated* by peers.
l. *Competition*—hero is competing with peer in game or contest.
m. *Hypnotism*
n. *Envy*—hero is envious of peer's accomplishments, capacities, etc.
o. *Revenge*—hero is anxious to exact revenge from a peer for some past deed or is taking the revenge.
p. *Disregard for*—hero is unconcerned over welfare of his peers.
q. *Bad influence*—hero's friends are considered unfavorable associates by him, his family, or narrator.

4. Sibling
a. *Pressure*—sibling is prohibitive, compelling, censuring, punishing, disapproving, interfering, restraining, etc.
b. *Succorance*—hero seeks or receives aid, advice, consolation from sibling.
c. (*Nurturance*—hero bestows or offers aid, advice, consolation upon sibling).
d. (*Aggression from*—physical harm inflicted upon or intended for hero by sibling).
e. *Aggression to*—physical harm inflicted upon or intended for sibling by hero.
f. *Rivalry*—hero and sibling are competitors for same objective.
g. (*Concern*—hero is worried about physical or mental well-being of his sibling).
h. *Incest*—with sibling.
i. *Death or illness* of sibling.

B. Intrapersonal
1. *Aspiration*—dreaming of future, hoping for future, determination.
2. *Inadequacy*—realization, whether justified or not, of lack of success; individual is at a loss to cope with situation.
3. *Curiosity*—wondering about construction of object, contents of room, etc.; desire to observe, inquire, explore, investigate; to acquire facts.
4. *Behavior disorder*—personal maladjustment of all sorts, neurosis, psychosis, sleeplessness, hallucination, withdrawal, eccentricity, morbid preoccupation.
5. *Suicide*—attempted or completed, preoccupation with.
6. *Moral struggle*—concern over what is right and wrong, hesitancy in indulging in some act because of ethical prescriptions.
7. *Guilt*—remorse.
8. *Drunkenness*
9. *Fear*—hero is apprehensive, alarmed, terrified, of some person, thing, force.
10. *Rumination*—inability to understand world and its problems, adolescent reverie, man's insignificance, "what am I?" "what's it all about?"
11. *Occupational concern*—deciding between jobs, considering vocations, dissatisfied with present employment, fails at present employment.
12. *Physical illness or death of central character*—(other than when in a peer, partner, sibling, parent relationship, which are included in those specific categories) other than suicide.
13. *Retribution*—forced to atone or be punished for some antisocial act.
14. *Reminiscence, sad*—individual is unhappy in his memories of the past or contemplation of future.
15. *Intra-aggression*—does physical harm to self, short of suicide (which is carried under that heading), either thru accident or deliberate.
16. *Religion*—prayer, seeking consolation from God, religious conflict, religious awakening.
17. *Loneliness*—central character misses someone, is an outcast, friendless, homeless.
18. *Compensation*—when individual has one characteristic or stroke of fortune to make up for another bad characteristic or misfortune.
19. *Vacillation*—wasting time, putting off a distasteful task, procrastination, loitering.
20. *Acquisition*—desire expressed by central character to acquire material things, or is working greedily for possession of goods; miserliness.
21. *Exhaustion* — characters completely "pooped" from overexertion.
22. *Revenge*—hero is preoccupied with wish to retaliate for some past wrong from unspecified individual (when peer, carried under that heading).
23. *Sad* over death of dog, broken toy, loss of object, etc.

Table 35 (cont'd)

24. *"Hurt feelings"*–central character is very sensitive over some happening, slight, insult, etc.
25. *Jealousy*–of unspecified individual (if specific person named, carried under appropriate heading).
26. *Self-pity*–hero feels sorry for self.
27. *Resurrection*–return of the dead, supernatural.
28. *Homesickness*–expressed by central character.
29. *Grief*–over loss of some unspecified individual.

C. Impersonal
1. *Economic pressure*–individual is compelled to, or prohibited from, or limited in, doing something because of the lack of money.
2. *Legal restriction*–individual is incarcerated, arrested or detained against his will.
3. *Generalized restriction*–environment is generally frustrating because of backwardness, danger, lack of opportunity, etc.; hopelessness of life.
4. *Aggression towards environment*–robbery, accident, murder of unspecified individual (if individual named, carried under the proper heading).
5. *Aggression from*–impersonal source, accident, animal, nature, disease, etc.
6. *War*
7. *Escape from perilous environment*–individual is in the act of getting out (doesn't include rescue, which comes under II).

II. Equilibrium (adjustment)

A. Interpersonal
1. Parent
   a. *Cooperation*–parent is working with child towards his own goal.
   b. *Resignation*–parent is resigned to child's activity.
   c. *Idealization*–child idealizes parent.
   d. *Reunion*–of child with parents.
   e. *Fulfillment*–child lives up to expectations of parents.
   f. *Contentment*–blissful home situation.
   g. *Ordinary familial activity*–just talking, spending an evening, etc.
2. Partner
   a. *Admiration*
   b. *Cooperation*–between mates, so that both are working for same end and are happy.
   c. *Contentment*–mutual love and affection.
   d. *Reunion*
   e. *Ordinary activity*
3. Peer
   a. *Cooperation*–working together for same goal.
   b. *Congeniality*–sociability, friendliness, satisfactory affiliation.
   c. *Reunion*–with friends.
   d. *Approbation*–hero is lauded, appreciated, by friends and peers.
   e. *Exhibition*–hero is amusing, entertaining, attracting others.
   f. *Ordinary activity*–everyday association with nothing particular happening.
4. Sibling (no II themes found in original sample of 150 cases).

B. Intrapersonal
1. *Self esteem*, confidence, belief in own superiority.
2. *Tranquility*–peace of mind, content with environment and own accomplishments, enjoyment, aesthetic appreciation.
3. *Reminiscence, happy*–individual is content with his memories.
4. *Retirement*–central character is asleep, resting, no physical exhaustion.
5. *Occupational satisfaction*
6. *Resignation to lot*–individual has resigned himself to whatever situation.
7. *Ordinary activity*–individual is going about his everyday activities.

C. Impersonal
1. *Favorable environment*–individual is being helped by favorable circumstances, is enjoying his surroundings.
2. *Rescue*–successful escape from perilous environment or cessation of noxious stimuli (already accomplished).

Table 35 (cont'd)

THE 12 THEMES ADDED BY THE AUTHORS

IA_1u	Alienation (parent and child): lack of emotional ties between parent and child - gap in communication between parent and child - educational or social status separation - parent and child.
IA_1t	Defiance: hero rebels against parental or authority figure's demands or wishes.
IA_1v	Hostility (to parent): hero shows contempt for parental figure (non-physical).
IA_2v	Hostility (to partner): hero shows contempt for partner (non-physical).
IA_4r	Hostility (to sibling): hero shows contempt for siblings (non-physical).
IA_3r	Hostility (to peers): hero shows contempt for peers (non-physical).
IB_{30}	Alienation: isolation, lack of communication - hero and other figures, separation of individual from society.
IB_{31}	Confusion: uncertainty, lack of direction, inability to comprehend the situation.
IB_{32}	Resentment: of hero to general environment, or people, hero feels others against him.
$IB_{8.5}$	Drug Use: central characters, taking drugs, concerned over drug use, the effects of drugs.
IIB_8	Contemplation: thinking about life, past events, or daydreaming - neutral emotional tone.
IIA_4a	Reunion: of hero with siblings.

TABLE 36

HAVE YOU EVER BEEN TO A -

	LSD Users		Non-Users	
	Yes	No	Yes	No
Psychiatrist	40	60	6	40
Psychologist	22	78	4	42
Mental Health Clinic	10	90	2	44
Mental Hospital	5	95	1	45

TABLE 37

AMOUNT OF TREATMENT

	LSD USERS	NON-USERS
1. More than 10 visits to a psychiatrist, psychologist, or mental health clinic (not including those in category 2)	17	2
2. Mental Hospital - inpatient	5	1
3. 10 or less visits to a psychiatrist, psychologist, or mental health clinic	29	5
4. No visits	49	38
TOTAL	100	46

TABLE 38

WHY WAS CONSULTATION IN (36) MADE?

	LSD USERS	NON-USERS
1. Family Problems (Parents thought he needed it)	16	1
2. School Problems (Problems with school work or school referral)	6	5
3. Marital or Partner Problems	2	-
4. Behavior Disorders (Anxiety, depression, hallucinations, paranoia, suicidal tendencies, homosexuality)	18	2
5. Because of LSD experience	2	-
6. No reason given	-	1
TOTAL	54	9

TABLE 3E

WHY WAS CONSULTATION IN (26) MADE?

	LSD USERS	NON-USERS
1. Family Problems (Parents thought he needed it)	16	1
2. School Problems (Problems with school work or school referral)	6	5
3. Marital or Partner Problems	2	-
4. Behavior Disorders (Anxiety, depression, hallucinations, paranoia, suicidal tendencies, homosexuality)	18	2
5. Because of LSD experience	2	-
6. No reason given	-	1
TOTAL	54	9

Date Due

OCT 20 1972			
OCT 5 1973			

FORM 109

BF 209 L9S55
Smart, Reginald George
Illicit drug users

DATE DUE	BORROWER'S NAME
OCT 20 1972	Josephine Saxby G
OCT 5 1973	J F Brailey U

BF 209 L9S55
Smart, Reginald George
Illicit drug users

Criminol